Glu Ser Pro Arg Tyr Leu Tyr Ile Ile Gln Asn Leu Glu Gly Pro Ala 225 230 235 Arg Lys Ser Leu Lys Arg Leu Thr Gly Trp Ala Asp Val Ser Gly Val 245 250 Leu Ala Glu Leu Lys Asp Glu Lys Arg Lys Leu Glu Arg Glu Arg Pro 265 Leu Ser Leu Leu Gln Leu Leu Gly Ser Arg Thr His Arg Gln Pro Leu 280 285 Ile Ile Ala Val Val Leu Gln Leu Ser Gln Gln Leu Ser Gly Ile Asn 295 Ala Val Phe Tyr Tyr Ser Thr Ser Ile Phe Glu Thr Ala Gly Val Gly 310 315 Gln Pro Ala Tyr Ala Thr Ile Gly Ala Gly Val Val Asn Thr Val Phe 325 330 Thr Leu Val Ser Val Leu Leu Val Glu Arg Ala Gly Arg Arg Thr Leu 340 345 His Leu Leu Gly Leu Ala Gly Met Cys Gly Cys Ala Ile Leu Met Thr 355 360 365 Val Ala Leu Leu Leu Glu Arg Val Pro Ala Met Ser Tyr Val Ser 375 380 Ile Val Ala Ile Phe Gly Phe Val Ala Phe Phe Glu Ile Gly Pro Gly 390 395 Pro Ile Pro Trp Phe Ile Val Ala Glu Leu Phe Ser Gln Gly Pro Arg 405 410 Pro Ala Ala Met Ala Val Ala Gly Phe Ser Asn Trp Thr Ser Asn Phe 420 425 Ile Ile Gly Met Gly Phe Gln Tyr Val Ala Glu Ala Met Gly Pro Tyr 440 445 Val Phe Leu Leu Phe Ala Val Leu Leu Gly Phe Phe Ile Phe Thr 455 460 Phe Leu Arg Val Pro Glu Thr Arg Gly Arg Thr Phe Asp Gln Ile Ser 470 475 Ala Ala Phe His Arg Thr Pro Ser Leu Leu Glu Gln Glu Val Lys Pro 485 490 Ser Thr Glu Leu Glu Tyr Leu Gly Pro Asp Glu Asn Asp 500

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 500 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Met Glu Gln Gln Asp Gln Ser Met Lys Glu Gly Arg Leu Thr Leu Val 10 Leu Ala Leu Ala Thr Leu Ile Ala Ala Phe Gly Ser Ser Phe Gln Tyr 20 25 Gly Tyr Asn Val Ala Ala Val Asn Ser Pro Ala Leu Leu Met Gln Gln 40 Phe Tyr Asn Glu Thr Tyr Tyr Gly Arg Thr Gly Glu Phe Met Glu Asp Phe Pro Leu Thr Leu Leu Trp Ser Val Thr Val Ser Met Phe Pro Phe 70 Gly Gly Phe Ile Gly Ser Leu Leu Val Gly Pro Leu Val Asn Lys Phe 90 Gly Arg Lys Gly Ala Leu Leu Phe Asn Asn Ile Phe Ser Ile Val Pro 100 105 110

Ala Ile Leu Met Gly Cys Ser Arg Val Ala Thr Ser Phe Glu Leu Ile Ile Ile Ser Arg Leu Leu Val Gly Ile Cys Ala Gly Val Ser Ser Asn Val Val Pro Met Tyr Leu Gly Glu Leu Ala Pro Lys Asn Leu Arg Gly Ala Leu Gly Val Val Pro Gln Leu Phe Ile Thr Val Gly Ile Leu Val Ala Gln Ile Phe Gly Leu Arg Asn Leu Leu Ala Asn Val Asp Gly Trp Pro Ile Leu Leu Gly Leu Thr Gly Val Pro Ala Ala Leu Gln Leu Leu Leu Leu Pro Phe Phe Pro Glu Ser Pro Arg Tyr Leu Leu Ile Gln Lys Lys Asp Glu Ala Ala Ala Lys Lys Ala Leu Gln Thr Leu Arg Gly Trp Asp Ser Val Asp Arg Glu Val Ala Glu Ile Arg Gln Glu Asp Glu Ala Glu Lys Ala Ala Gly Phe Ile Ser Val Leu Lys Leu Phe Arg Met Arg Ser Leu Arg Trp Gln Leu Leu Ser Ile Ile Val Leu Met Gly Gln Gln Leu Ser Gly Val Asn Ala Ile Tyr Tyr Tyr Ala Asp Gln Ile Tyr Leu Ser Ala Gly Val Pro Glu Glu His Val Gln Tyr Val Thr Ala Gly Thr Gly Ala Val Asn Val Val Met Thr Phe Cys Ala Val Phe Val Val Glu Leu Leu Gly Arg Arg Leu Leu Leu Leu Gly Phe Ser Ile Cys Leu Ile Ala Cys Cys Val Leu Thr Ala Ala Leu Ala Leu Gln Asp Thr Val Ser Trp Met Pro Tyr Ile Ser Ile Val Cys Val Ile Ser Tyr Val Ile Gly His Ala Leu Gly Pro Ser Pro Ile Pro Ala Leu Leu Ile Thr Ile Phe Leu Gln Ser Ser Arg Pro Ser Ala Phe Met Val Gly Gly Ser Val His Trp Leu Ser Asn Phe Thr Val Gly Leu Ile Phe Pro Phe Ile Gln Glu Gly Leu Gly Pro Tyr Ser Phe Ile Val Phe Ala Val Ile Cys Leu Ile Thr Thr Ile Tyr Ile Phe Leu Ile Val Pro Glu Thr Lys Ala Lys Thr Phe Ile Glu Ile Asn Gln Ile Phe Thr Lys Met Asn Lys Val Ser Glu Val Tyr Pro Glu Lys Glu Glu Leu Lys Glu Leu Pro Pro Val Thr Ser Glu Gln

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: primer

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

TGTTTCCTAG TCTTTGCTAC A

21

- (2) INFORMATION FOR SEQ ID NO:9:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 18 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: primer
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

TTGTTAAGGC CTTCCATT

18

- (2) INFORMATION FOR SEQ ID NO:10:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 493 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Met Xaa Xaa Gly Phe Gln Xaa Gly Ser Val Thr Gly Thr Leu Val Leu 10 Ala Val Leu Ile Ala Ala Leu Gly Ser Phe Gln Tyr Gly Tyr Asn Leu Gly Val Ile Asn Ala Pro Gln Lys Val Ile Glu Ala Phe Tyr Glu Thr 40 Trp Leu Gly Arg Xaa Gly Glu Xaa Pro Ser Val Pro Thr Leu Thr Leu 55 Leu Trp Ser Leu Ser Val Ser Ile Phe Ala Val Gly Gly Met Ile Gly Ser Phe Leu Val Gly Xaa Ile Gly Asn Arg Leu Gly Arg Lys Xaa Ala 85 90 Met Leu Val Asn Asn Val Leu Ala Ile Ala Gly Gly Leu Leu Met Gly 105 Leu Ala Lys Xaa Ala Xaa Ser Phe Glu Met Leu Ile Leu Gly Arg Phe 120 125 Ile Ile Gly Leu Tyr Cys Gly Leu Ser Ser Gly Val Val Pro Met Tyr 130 135 Val Gly Glu Ile Ser Pro Thr Ala Leu Arg Gly Ala Leu Gly Thr Leu 150 155 Asn Gln Leu Gly Ile Val Ile Gly Ile Leu Ile Ala Gln Val Leu Gly 165 170 Leu Asp Ser Leu Leu Gly Asn Glu Ser Leu Trp Pro Leu Leu Gly 180 185 Leu Thr Gly Val Pro Ala Leu Leu Gln Leu Leu Leu Pro Phe Cys 195 200 205 Pro Glu Ser Pro Arg Tyr Leu Leu Ile Asn Lys Asn Glu Glu Ala Arg 215 Ala Lys Lys Ala Leu Gln Arg Leu Arg Gly Thr Ala Asp Val Ser Gln 230 235 Glu Val Ala Glu Met Lys Asp Glu Ser Arg Xaa Met Xaa Ser Glu Lys 250